



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,273	06/22/2001	David W. Burns	2207/ 11315	8639
25693	7590	09/19/2005	EXAMINER	
KENYON & KENYON (SAN JOSE) 333 WEST SAN CARLOS ST. SUITE 600 SAN JOSE, CA 95110			MEONSKE, TONIA L	
			ART UNIT	PAPER NUMBER
			2183	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/888,273	BURNS ET AL.
	Examiner	Art Unit
	Tonia L. Meonske	2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 29 June 2005.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,2,4-18,20-26 and 28-30 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1,2,7,9-11,15,17,18,23,25 and 26 is/are rejected.  
 7) Claim(s) 4-6,8,12-14,16,20-22,24 and 28-30 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____.
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.



## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1,2,7,9-11,15,17,18,23, 25 and 26 are rejected under 35 U.S.C. 102(e) as being anticipated by Sager, US Patent 6,542,921 (herein referred to as Sager).

4. Referring to claim 1, Sager has taught in a multi-threaded processor for at least first and second threads, a method of assigning thread priority comprising:

- a. assigning priority to said first thread (abstract, Figure 9, element 909);
- b. loading a preliminary value to a thread precedence counter (abstract, Figure 9, element 905, “Priority Period”);
- c. assigning priority to said second thread in response to expiration of said thread precedence counter (abstract, Figure 9, element 917);

- d. determining if there is an indication of approaching instruction side starvation for said first thread (abstract, Figure 11, element 1117); and
- e. incrementing a value stored in said first starting counter in response to an indication of approaching instruction side starvation for said first thread (Figure 11, element 1121, column 9, lines 12-29).

5. Claim 9 does not recite limitations above the claimed invention set forth in claim 1 and is therefore rejected for the same reasons set forth in the rejection of claim 1 above.

6. Referring to claim 2, Sager has taught the method of claim 1, as described above, and wherein said preliminary value is based on a value stored in a first starting counter associated with said first thread. (abstract, Figures 9 and 10, column 11, line 29-column12, line 63)

7. Claims 10, 18, and 26 do not recite limitations above the claimed invention set forth in claim 2 and are therefore rejected for the reasons set forth in the rejection of claim 2 above.

8. Claim 11 does not recite limitations above the claimed invention set forth in claim 1 and therefore is rejected for the same reasons set forth in the rejection of claim 1 above.

9. Referring to claim 7, Sager has taught in a multi-threaded processor to handle processing of at least first and second threads, a method of assigning thread priority comprising:

- a. assigning priority to said first thread (Figure 9, element 909); and
- b. assigning priority to said second thread (Figure 9, element 917) in response to one of the plurality of conditions being true, the conditions consisting of:
  - i. if a thread precedence counter expires;
  - ii. if processing of said first thread retires an instruction from said first thread; and

iii. if there is not an indication of approaching instruction side starvation for said first thread (Figure 9, elements 913 and 917, When the priority of the second thread is assigned in response to only the current priority period expiring, element 913, the condition is true that there is not an indication of approaching instruction side starvation for said thread.).

10. Claims 15 and 23 do not recite limitations above the claimed invention set forth in claim 7 and are therefore rejected for the same reasons set forth in the rejection of claim 7 above.

11. Referring to claim 17, Sager has taught a computer system to handle processing of at least first and second threads in parallel, comprising:

a. a memory to store instructions for first and second threads (Figure 1, column 4, lines 7-15);

B. a processor including

i. control logic coupled to said memory to assign priority between said first and second threads (abstract, Figure 9, Figure 13, element 1301);

ii. a thread precedence counter coupled to said control logic wherein priority is assigned to said second thread after said thread precedence counter expires (abstract, Figure 9, element 905, element 917, “Priority Period”) wherein said control logic is to determine if there is an indication of approaching instruction side starvation for said first thread (abstract, Figure 11, element 1117) and to increment a value stored in said first starting counter in response to an indication of approaching instruction side starvation for said first thread (Figure 11, element 1121, column 9, lines 12-29)..

12. Claim 25 does not recite limitations above the claimed invention set forth in claim 17 and is therefore rejected for the same reasons set forth in the rejection of claim 17 above.

***Response to Arguments***

13. Applicant's arguments filed June 29, 2005 have been fully considered but they are not persuasive.

14. On pages 11-13, Applicant argues in essence:

*"Applicant's submit that the cited section does not disclose Iside starvation as disclosed in embodiments of the applicants' invention. Further support for the indication of a approaching instruction side starvation can be found on page 9, line 3 of the specification which states: "Iside starvation is when a thread cannot fetch instructions because the other thread(s) has/have effectively blocked it from doing so. As used herein, and indication of approaching Iside starvation is an indication that such a situation may be approaching for a thread. An indication of approaching Iside starvation can be anticipated through the monitoring of one or more conditions. In one embodiment, the conditions may include on or more of the following"*

...

*Applicants respectfully submit the cited reference does not disclose "...determining if there is an indication of approaching instruction side starvation for said first thread..."*

However, as an initial matter, Applicant is arguing a feature of the invention not specifically stated in the claim language, which is improper. Claimed subject matter, not the specification, is the measure of invention. Limitations in the specification cannot be read into the claims for the purpose of avoiding the prior art. *In re Self*, 213 USPQ 1,5 (CCPA 1982); *In re Priest*, 199 USPQ 11,15 (CCPA 1978).

*"It is the claims that measure the invention." SRI Int'l v. Matshshita Elec. Corp., 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed. Cir. 1985) (en banc).*

*"The invention disclosed in Hiniker's written description may be outstanding in its field, but the name of the game is the claim." In re Hiniker Co., 47 USPQ2d 1523, 1529 (Fed. Cir. 1998).*

*"[A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they*

*would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." In re Morris, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997).*

*"limitations appearing in the specification will not be read into the claims, and ... interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper'." Intervet Am., v. Kee-Vet Labs., 12 USPQ2d 1474, 1476 (Fed. Cir. 1989)(citation omitted).*

*"it is entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim, ... this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper. By 'extraneous,' we mean a limitation read into a claim from the specification wholly apart from any need to interpret ... particular words or phrases in the claim." In re Paulsen, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) (citation omitted).*

In this case, if applicant would like specific limitations read into the claims i.e. regarding Icache starvation, then Applicant should specifically claim those limitations. Furthermore, even if applicant had claimed the details of the Icache starvation from the specification, Sager would still read on the claims. Sager has taught "determining if there is an indication of approaching instruction side starvation for said first thread (Figure 11, When precedence switches to thread 1, thread 0 may be starved, or blocked from fetching and executing instructions, by thread 1. When the thread switch actually occurs, thread 1 blocks thread 0 from fetching and execution instructions.); and incrementing a value stored in said first starting counter in response to an indication of approaching instruction side starvation for said first thread (Figure 11, element 1121)." Therefore this argument is moot.

15. On pages 13-14, Applicant argues in essence:

*“It is clear Sager does not disclose assigning priority based on a plurality of conditions including the indication of approaching Iside starvation as described in the embodiment of claim 7 in its description of elements 913 and 917.”*

However, Applicant has not claimed *assigning priority based on a plurality of conditions including the indication of approaching Iside starvation*. In fact Applicant has claimed the contrary, “assigning priority to said second thread in response to one of a plurality of conditions being true, the conditions consisting of ... if there is NOT an indication of approaching instruction side starvation.” Therefore this argument is moot.

***Allowable Subject Matter***

16. Claims 4-6,8,12-14,16,20-22,24 and 28-30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

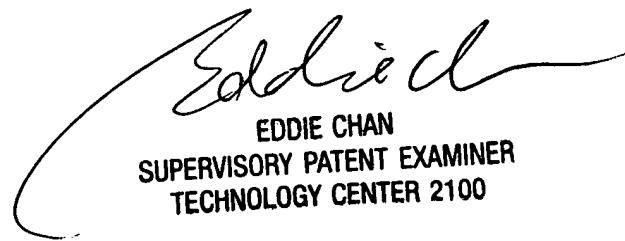
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L. Meonske whose telephone number is (571) 272-4170. The examiner can normally be reached on Monday-Friday, with every other Friday off.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Eddie P. Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2183

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tlm



EDDIE CHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100